SUBMIT ONE HARD COPY AND ONE ELECTRONIC COPY

WYOMING POLLUTANT DISCHARGE ELIMINATION SYSTEM
APPLICATION FOR PERMIT TO DISCHARGE FROM

SEWAGE TREATMENT FACILITIES

Revised April 2017
PLEASE PRINT OR TYPE

For Agency Use Only

Application Number

WY00_____

Date Received:

_____
(mo/day/yr)

FOR ANY QUESTION, PLEASE ATTACH ADDITIONAL SHEETS, COPIES OR INFORMATION AS NEEDED (BE SURE TO INCLUDE THE LETTER AND ITEM # ON THE ATTACHMENT)

A. TYPE OF PERMIT BEING APPLIED FOR (check one):

☐ New
X Renewal
☐ Major modification

FOR PERMIT RENEWAL OR MAJOR MODIFICATION:

Permit number: WY0021920

Expiration Date: 10/31/2018

For permit modifications, please attach a letter explaining modifications requested.

B. DESCRIPTION OF THE TREATMENT SYSTEM: (e.g., "Includes a mechanical bar screen with a manual bypass bar screen and a girt chamber", "flows through an ultraviolet (UV) disinfection unit", etc.). You may include description on separate sheet.

See Attachment #1

Also, please provide a site sketch showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. This includes a water balance showing all treatment units, including disinfection, and showing daily average flow rates at influent and discharge points, and approximate daily flow rates between treatment units

See Attachment #2

C. IDENTIFICATION OF THE TYPE OF COLLECTION SYSTEM USED BY THE TREATMENT WORKS:
(check one): A separate sanitary system X OR A combined storm and sanitary system ☐

Estimate of the percent of sewer line that each type comprises: N/A

How many bypass outfalls does this facility contain? One

How many constructed emergency overflow outfalls does this facility contain? Zero

If you've checked the combined storm and sanitary system box, then additional information will be requested.

D. COMPANY, CONTACT NAME, MAILING ADDRESS, E-MAIL ADDRESS, AND TELEPHONE NUMBER of the individual or company which owns the facility (permittee), and the person (consultant) responsible for permit submission.	
Company Contact Name J. Carter Napier	Consultant Contact Name Megan S. Lockwood
Company Name City of Casper	Company Name City of Casper
Mailing Address 200 N. David St.	Mailing Address 200 N. David St.
City, State, and Zip Code Casper, WY 82601	City, State, and Zip Code Casper, WY 82601
Telephone Number (307) 235-8224	Telephone Number (307) 235-8477
E-Mail Address cnapier@casperwy.gov	E-Mail Address mlockwood@casperwy.gov
Preference for contact: Email	Preference for contact: Email

Status of applicant: ☐ Federal ☐ State ☐ Private X Public ☐ Other _____

Status of applicant: ☐ Owner ☐ Operator X Both

E. FACILITY INFORMATION			
Name of the facility (this is the facility name that will appear on the WYPDES permit) Sam H. Hobbs Regional Wastewater Facility			
Address 2400 Bryan Evansville Rd.		County Natrona	
City, State, and Zip Code Casper, WY 82609			
Telephone Number (307) 235-8477		Facsimile Number (307) 235-7516	
Quarter/Quarter NWNW	Section 2	Township 33N	Range 79W
Latitude (decimal degrees to 5 decimal places) 42.85946		Longitude (decimal degrees to 5 decimal places) -106.29259	
Receiving Water Description (in the event of facility discharge, where would the discharge go?) North Platte River (class 2AB water)			

F. POPULATION OF MUNICIPAL ENTITIES SERVED BY THIS FACILITY (including unincorporated connector districts)	
Name of Municipal Entity #1 City of Casper	**Name of Municipal Entity #2** Town of Bar Nunn
Population 55,316	Population 2,213
Mailing Address 200 N. David St.	Mailing Address 4820 Wardwell Industrial Ave.
City, State, and Zip Code Casper, WY, 82601	City, State, and Zip Code Bar Nunn, WY 82601
Is collection system (check one): A separate sanitary system [X] or A combined storm and sanitary system [ ]?	Is collection system (check one): A separate sanitary system [X] or A combined storm and sanitary system [ ]?
Is collection system (check one): Owned [X] or maintained by the municipal entity?	Is collection system (check one): Owned [X] or maintained [ ] by the municipal entity?
Name of Municipal Entity #3 Town of Evansville	**Name of Municipal Entity #4** Wardwell Water & Sewer District
Population 2,544	Population 1,870
Mailing Address PO Box 158	Mailing Address PO Box 728
City, State, and Zip Code Evansville, WY 82636	City, State, and Zip Code Mills, WY 82644
Is collection system (check one): A separate sanitary system [X] or A combined storm and sanitary system [ ]?	Is collection system (check one): A separate sanitary system [X] or A combined storm and sanitary system [ ]?
Is collection system (check one): Owned [X] or maintained [ ]by the municipal entity?	Is collection system (check one): Owned [X] or maintained [ ]by the municipal entity?
Name of Municipal Entity #5 Town of Mills	**Name of Municipal Entity #6** Natrona County International Airport
Population 3,461	Population 470
Mailing Address PO Box 789	Mailing Address 8500 Airport Parkway
City, State, and Zip Code Mills, WY 82644	City, State, and Zip Code Casper, WY 82604
Is collection system (check one): A separate sanitary system [X] or A combined storm and sanitary system [ ]?	Is collection system (check one): A separate sanitary system [X] or A combined storm and sanitary system [ ]?
Is collection system (check one): Owned [X] or maintained [ ]by the municipal entity?	Is collection system (check one): Owned [X] or maintained [ ]by the municipal entity?

F. POPULATION OF MUNICIPAL ENTITIES SERVED BY THIS FACILITY (including unincorporated connector districts)	
Name of Municipal Entity #7 Westland Park	**Name of Municipal Entity #8** Vista West
Population 150	Population 1,000
Mailing Address PO Box 1343	Mailing Address PO Box 1438
City, State, and Zip Code Mills, WY 82644	City, State, and Zip Code Mills, WY 82644
Is collection system (check one): A separate sanitary system [X] or A combined storm and sanitary system [ ]?	Is collection system (check one): A separate sanitary system [X] or A combined storm and sanitary system [ ]?
Is collection system (check one): Owned [X] or maintained [ ] by the municipal entity?	Is collection system (check one): Owned [X] or maintained [ ] by the municipal entity?

(Additional pages may be added as necessary)

G. FLOW RATE: for the past three years provide (in MGD):

The facility's design flow rate (the wastewater flow rate that the plant was built to handle):
10.0MGD

The facility's annual average daily flow rate:
2015 – 7.309MGD 2016 – 7.331MGD 2017 – 6.800MGD

The facility's maximum daily flow rate:
2015 – 11.100MGD 2016 – 13.290MGD 2017 – 8.408MGD

H. PRETREATMENT PROGRAM:

Does the treatment works have, or is it subject to, an approved pretreatment program?
X Yes ____No

Provide the number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs) that discharge to the treatment works.

Number of non-categorical SIUs: 8

Number of CIUs: 1

I. OUTFALL INFORMATION: Provide the following information for each outfall:

Outfall Information									
Discharge Point Number #	**Immediate Receiving Stream**	**Main stem (nearest perennial stream)**	**Distance from outfall to main stem (stream miles)**	**Quarter/ Quarter**	**Section**	**Township**	**Range**	**Latitude** (decimal degrees to 5 decimal places)	**Longitude** (decimal degrees to 5 decimal places)
001	N. Platte	N. Platte	0	NWNW	2	33N	79W	42.86323	-106.29282
002	N. Platte	N. Platte	0	NWNW	2	33N	79W	42.86329	-106.29335

(Additional pages may be added as necessary)

FOR ALL MINOR AND MAJOR FACILITIES WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD
Please Complete the Following

J. FLOW: What is the current average daily volume of inflow and infiltration in gallons per day?

The City of Casper has not conducted an inflow and infiltration study and does not have actual figures.

What steps are being taken to minimize inflow and infiltration?

The City has an ordinance that forbids both roof gutter drains and basement sump pumps from tying into the sanitary sewer system. This applies to all new construction and are required to be removed if found during remodeling.

The City minimizes the amount of construction of sewer manholes in drainages or flood prone areas. Where it is unavoidable, the City requires waterproof lids to limit the amount of storm water and/or runoff in the sanitary sewer.

The City performs closed circuit television (CCTV) inspection of all sewers. Areas of infiltration are noted in the inspections and targeted for rehabilitation, typically by lining.

K. SCHEDULED IMPROVEMENTS AT THE PLANT

For each outfall, provide a list of improvements to the plant that have been scheduled for the next five years. For each improvement, provide the commencement and completion date of construction, commencement date of discharge, and attainment of operational level.

Have appropriate permits/clearances concerning other Federal/State requirements been obtained? ____Yes _X_No

Describe briefly: The plant plans to complete the following projects in the next 5 years; exact dates have not yet been established:

-MCC replacement
-New boiler installation
-Install isolation gates for aeration basins
-Plantwide generator
-Replace RAS piping & valves
-Repair concrete on secondary
-Replace clarifier drives
-Replace mixed liquor line
-Replace mixed liquor gates
-Replace DAFT pressure tanks
-Replace WAS pumps
-Repair/replace secondary piping

L. PLEASE PROVIDE A TOPOGRAPHIC MAP (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the treatment plant, depicting the facility and each of it's:

1. Intake and discharge structures
2. Hazardous waste treatment storage or disposal facilities
3. Wells where fluids from the facility are injected underground
4. Wells, springs, drinking water wells and any other surface water bodies that are listed in public records or otherwise known to the applicant in the map area.
5. Sewage sludge management facilities, including on-site treatment, storage, and disposal sites.
6. Location(s) at which waste classified as hazardous under RCRA enters the treatment plant by truck, rail or dedicated pipe.
7. Access route to the facility (see Q below).

See Attachment 3

M. PLEASE PROVIDE A DIAGRAM showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also, provide a narrative description of the diagram.

See Attachment 4

N. PLEASE PROVIDE THE FOLLOWING INFORMATION FOR EACH OUTFALL, INCLUDING BYPASS POINTS, THROUGH WHICH EFFLUENT IS DISCHARGED, AS APPLICABLE:

1. Outfall number:
   Outfall 001is the final effluent outfall and discharges continuously
   Outfall 002 is the emergency bypass outfall
2. Average daily flow rate, in million gallons per day
   Outfall 001 – 7.130MGD (average of 3 years)
   Outfall 002 – Operation Shutdown; has never discharged
3. Provide the following information for each outfall with a seasonal or periodic discharge: N/A
   a. Number of times per year the discharge occurs
   b. Duration of each discharge
   c. Flow of each discharge
   d. Months in which discharge occurs
   e. Is the outfall equipped with a diffuser? If so, what type of diffuser is being used (e.g., high-rate)

O. DOES THE FACILITY RECEIVE WASTES ASSOCIATED WITH:

1. The Resource Conservation and Recovery Act (RCRA)?
   No
2. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)?
   No
3. The Corrective Action Wastes (RCRA), or wastes generated at another type of cleanup or remediation site?
   No

If you've answered yes to any of the above questions (1-3), then additional information will be requested.

P. PLEASE PROVIDE THE NAME, MAILING ADDRESSES AND TELEPHONE NUMBERS of all landowners where outfalls will be located, if property owner is other than applicant	
Landowner Name #1 N/A	Landowner Name #2
Mailing Address	Mailing Address
City, State, and Zip Code	City, State, and Zip Code
Telephone Number	Telephone Number

(Additional pages may be added as necessary)

Q. Landowner Access: As part of the application, the applicant shall certify under penalty of perjury that the applicant has secured and shall maintain permission for Department of Environmental Quality personnel and their invitees to access the permitted facility, including (i) permission to access the land where the permitted facility is located, (ii) permission to collect resource data as defined by Wyoming Statute § 6-3-414, and (iii) permission to enter and cross all properties necessary to access the permitted facility if the facility cannot be directly accessed from a public road. A map of access route(s) to the facility shall accompany the application.

R. REPRESENTATIVE WATER QUALITY ANALYSIS FOR ALL APPLICANTS: all applicants must provide the results of a water analyses for a sample collected from this facility or a location representative of the quality of water being proposed for discharge for the parameters listed below, in table 1. The analyses must be conducted in accordance with approved EPA test procedures (40 CFR Part 136). The sample must be collected within 90 days of submittal of the permit application. Include a signed copy of your lab report that includes the following:

a. Analytical method
b. Results of each of the chemical parameters at the units given below
c. Date of sample collection
d. Date of analysis for each parameter
e. Detection limit for each parameter as achieved by the laboratory.

S. REPRESENTATIVE WATER QUALITY ANALYSIS FOR FACILITIES WITH A DESIGN CAPACITY OF 1.0 MGD AND FACILITIES THAT DO NOT HAVE AN APPROVED PRETREATMENT PROGRAM: applicants with facilities with a design capacity of 1.0 MGD AND do not have an approved pretreatment program must also provide the results of THREE water analyses for samples collected from this facility or a location representative of the quality of water being proposed for discharge for the parameters listed below, in table 2. Applicants must provide data for a minimum of three samples taken within four and one-half years prior to the date of the permit application. The analyses must be conducted in accordance with approved EPA test procedures (40 CFR Part 136). Include a signed copy of your lab report that includes the following:

a. Analytical method
b. Results of each of the chemical parameters at the units given below
c. Date of sample collection
d. Date of analysis for each parameter
e. Detection limit for each parameter as achieved by the laboratory.

Table 1

Parameter	Units	Reporting limit or Practical Quantitation Limits	
Biological Oxygen Demand (BOD or CBOD)	mg/L	5.0	
E. coli	colonies per100 mls.	1 colony forming unit per 100 mls.	
Ph	Standard Units (s.u.)	0.01 pH units (s.u.)	
Temperature	Degrees Celsius	0.1 degree	
Total Suspended Solids	mg/L	10.0	
Hardness (CaCO3) mg/L	mg/L	10	

Table 2				
Metals (total recoverable), cyanide and total phenols	2-chloroethylvinyl ether	4,6-dinitro-o-cresol	Chrysene	N-nitrosodiphenylamine
Antimony Required Detection limit (1 µg/l)	Chloroform	2,4-dinitrophenol	Di-n-butyl phthalate	Phenanthrene
Arsenic Required Detection limit (1 µg/l)	Dichlorobromomethane	2-nitrophenol	Di-n-octyl phthalate	Pyrene
Beryllium Required Detection limit (.001 µg/l)	1,1-dichloroethane	4-nitrophenol	Dibenzo(a,h)anthracene	1,2,4,-trichlorobenzene
Cadmium Required Detection limit (5 µg/l)	1,2-dichloroethane	Pentachlorophenol	1,2-dichlorobenzene	
Chromium Required Detection limit (10 µg/l)	Trans-1,2-dichloroethylene	Phenol	1,3-dichlorobenzene	
Copper Required Detection limit (10 µg/l)	1,1-dichloroethylene	2,4,6-trichlorophenol	1,4-dichlorobenzene	
Lead Required Detection limit (2 µg/l)	1,2-dichloropropane	*Base-neutral compounds*	3,3-dichlorobenzidine	
Mercury Required Detection limit (1 µg/l)	1,3-dichloropropylene	Acenaphthene	Diethyl phthalate	
Nickel Required Detection limit (10 µg/l)	Ethylbenzene	Acenaphthylene	Dimethyl phthalate	
Selenium Required Detection limit (5 µg/l)	Methyl bromide	Anthracene	2,4-dinitrotoluene	
Silver Required Detection limit (3 µg/l)	Methyl chloride	Benzidine	2,6-dinitrotoluene	
Thallium Required Detection limit (0.1 µg/l)	Methylene chloride	Benzo(a)anthracene	1,2-diphenylhydrazine	
Zinc Required Detection limit (50 µg/l)	1,1,2,2-tetrachloroethane	Benzo(a)pyrene	Fluoranthene	
Cyanide	Tetrachloroethylene	3,4 benzofluoranthene	Fluorene	
Total phenolic compounds	Toluene	Benzo(ghi)perylene	Hexachlorobenzene	
Volatile organic compounds	1,1,1-trichloroethane	Benzo(k)fluoranthene	Hexachlorobutadiene	
Acrolein	1,1,2-trichloroethane	Bis (2-chloroethoxy) methane	Hexachlorocyclo-pentadiene	
Acrylonitrile	Trichloroethylene	Bis (2-chloroethyl) ether	Hexachloroethane	
Benzene	Vinyl chloride	Bis (2-chloroisopropyl) ether	Indeno(1,2,3-cd)pyrene	
Bromoform	*Acid-extractable compounds*	Bis (2-ethylhexyl) phthalate	Isophorone	
Carbon tetrachloride	P-chloro-m-creso	4-bromophenyl phenyl ether	Naphthalene	
Chlorobenzene	2-chlorophenol	Butyl benzyl phthalate	Nitrobenzene	
Chlorodibromomethane	2,4-dichlorophenol	2-chloronaphthalene	N-nitrosodi-n-propylamine	
Chloroethane	2,4-dimethylphenol	4-chlorophenyl phenyl ether	N-nitrosodimethylamine	

T. AUTHORIZED SIGNATURE

Authorized signatories for this application are the following:	
For corporations:	*A principal executive officer of at least the level of vice president, or the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the overall operation of the facility from which the discharge originates.*
For partnerships:	*A general partner.*
For a sole proprietorship:	*The proprietor.*
For a municipal, state, federal or other public facility:	*Either a principal executive officer or ranking elected official.*

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. Additionally, I certify that I have secured and shall maintain permission for Department of Environmental Quality personnel and their invitees to access the permitted facility, including (i) permission to access the land where the facility is located, (ii) permission to collect resource data as defined by Wyoming Statute § 6-3-414, and (iii) permission to enter and cross all properties necessary to access the facility if the facility cannot be directly accessed from a public road. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

J. Carter Napier
Printed Name of Person Signing

City Manager
Title

April 9, 2018
Date

Signature of Applicant

(307) 235-8224
Telephone

(307) 235-8313
Fax

cnapier@casperwy.gov
Email

Section 35-11-901 of Wyoming Statutes provides that:

*All permit applications must be signed in accordance with 40 CFR Part 122.22, "for" or "by" signatures are not acceptable.

Section 35-11-901 of Wyoming Statutes provides that:
Any person who knowingly makes any false statement, representation, or certification in any application ... shall upon conviction be fined not more than $10,000 or imprisoned for not more than one year, or both.

Mail this application to:

WYPDES Permits Section
Department of Environmental Quality/WQD
200 West 17th Street, Suite 400, Cheyenne, WY 82002

Wyoming Statute 35-11-312 was revised to require discharge permit fees be paid prior to permit issuance. Therefore, payment of permit fees must be accompanied with the application. Any application received without proper fee payment will be returned.

Individual permits are issued for a period of five years. A check for $500 per permit must be included with all applications for new permits and renewals for individual WYPDES permits.

I have enclosed a check for $_____

Check Number _____

For Agency Use Only

Date Check Received _____

Check Amount _____

Permit Term _____

Approval _____

Attachment 1

B. DESCRIPTION OF THE TREATMENT SYSTEM: (e.g., "Includes a mechanical bar screen with a manual bypass bar screen and a girt chamber", "flows through an ultraviolet (UV) unit", etc.). You may include description on separate sheet.

City of Casper Regional Wastewater Treatment Facility Process Description

The Sam H. Hobbs Wastewater Treatment Facility consists of preliminary, primary, and secondary treatment processes, UV disinfection, and solids handling including centrifuge dewatering.

1. Preliminary Treatment

Preliminary treatment consists of the following equipment:

- (3) Screw Lift Pumps
- (2) Automatic Barscreen Units
- (1) Manually Raked Bar Screen
- (2) Grit Chamber Tanks
- (2) Grit Slurry Pumps
- (2) Grit Cyclone Units

Wastewater enters the raw sewage wet well from the collection system and from an integrated septage receiving station where (3) screw lift pumps elevate it into the headworks building for preliminary treatment. After screenings and grit removal, the wastewater flow is measured through the influent Parshall flume and flow into an influent splitter box towards the primary treatment process.

2. Primary Treatment

Primary treatment consists of the following equipment:

- (2) Circular Primary Clarifiers
- (1) Primary Sludge Pumping Station with (3) Piston Style Pumps

Flow from the influent splitter box is directed to one or both primary clarifiers for settling. The settled sludge is pump via the primary sludge piston pumps to the gravity thickener. Clarified primary effluent from the primary clarifiers is combined with return activated sludge (RAS) and flows to a control structure near the biotower where it enters the second treatment process.

3. Secondary Treatment

Secondary treatment consists of the following equipment:

- (1) Biotower and Associated Pump Station (offline)
- (4) Aeration Basins with Fine Bubble Diffused Air System
- (3) Single Stage Centrifugal Blowers
- (4) Circular Secondary Clarifiers
- (3) Return Activated Sludge Pumps
- (2) Waste Activated Sludge Pumps

Clarified primary effluent from the primary clarifiers is combined with RAS and flows to a control structure near the biotower. Currently, the flow bypasses the biotower and flows directly to the aeration basins. Mixed liquor flows by gravity from the aeration basins to a diversion structure and on to secondary clarifiers. Settled mixed liquor flows from the secondary clarifiers to the RAS wet well.

As aforementioned, RAS is pumped to combine with primary effluent prior to the control structure at the biotower. A portion of the RAS flow is wasted from the system to maintain proper F/M ratio in the secondary process. The waste activated sludge (WAS) is pumped from a RAS line to a dissolved air floatation thickener (DAFT) via wasting pumps. The clarified secondary effluent flows to the ultraviolet (UV) light facility for disinfection.

4. UV Disinfection

UV disinfection consists of the following equipment:

- (4) banks of low pressure, high intensity UV light lamp systems

Clarified secondary effluent flows from the secondary clarifiers through the UV disinfection channels, through a Parshall flume for measurement and enters the N. Platte River through Outfall 001.

5. Solids Handling

Solids handling consists of the following equipment:

- (1) Gravity Thickener
- (1) Thickened Primary Sludge Pump Station with (3) Piston Style Pumps
- (2) Dissolved Air Floatation Tanks (DAFT) with Associated Pumps and Piping
- (2) Thickened Waste Activated Sludge Pumps
- (3) Anaerobic Digesters with Recirculation Pumps and Gas Mixing Systems
- (2) Natural Gas/Methan Fired Boierls
- (3) Heat Exchangers
- (2) Centrifuge and Associated Polymer System, Feed Pumps, Grinders, Piping, and Conveyors

Primary solids from the primary clarifiers are thickened to 3-5% in the gravity thickener before being pumped to the day tank located at the DAFT. Secondary solids are thickened to 3-5% in the DAFT units and are skimmed into the day tank to combine with primary solids. The combined solids are pumped to the anaerobic digesters via the thickened waste sludge pumps.

Anaerobic digested solids are pumped from the digesters to the centrifuge for dewatering. The centrifuge produces a dewatered sludge of approximately 20-23%. The centrifuge centrate flows from the centrifuge back to the headworks for treatment. Dewatered biosolids are transported to the City of Casper Regional Solid Waste Facility.

Attachment 2

B. Please provide a site sketch showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. This includes a water balance showing all treatment units, including disinfection, and showing daily average flow rates at influent and discharge points, and approximate daily flow rate between treatment units.

BUILDING KEY	
A	OPERATIONS BUILDING
B	HEADWORKS BUILDING
C	SECONDARY CLARIFIERS
D	BIOFILTER BUILDING
E	BLOWER BUILDING
F	UV LIGHT DISINFECTION FACILITY
G	GRAVITY THICKENER
G 1	THICKENED SLUDGE PUMP STATION
H	DAFT BUILDING
I	DIGESTER CONTROL BUILDING
J	GARAGE/SHOP
K	MAINTENANCE / COLLECTION OFFICE BUILDING
L	PRIMARY CLARIFIERS
M	DEWATERING BUILDING
N	EQUIPMENT MAINTENANCE BUILDING
O	SECONDARY GALLERY
P	RAS PUMP STATION
Q	CONVAULT / FUEL STATION
R	STORM SEWER CATCH BASIN
S	VEHICLE WASH PAD

- DUMPSTER
- FIRE HYDRANT
- WIND SOCK
- MAIN TRUCK ROUTE

004 STORM WATER DISCHARGE

NORTH PLATTE RIVER

001 EFFLUENT DISCHARGE

001 003 002 STORM WATER DISCHARGE 001

LAY DOWN YARD

11 12

INDUSTRIAL BED

SLUDGE STORAGE

M

SLUDGE STORAGE

R S

WEST ENTRANCE

19 25
20 26
21 27
SLUDGE DRYING BEDS
22 28
23 29
24 30

H

4 N
C
3 F

G1 3
G I
1 2
J
PARKING

WASTE GAS BURNER

1 6
2 7
SLUDGE DRYING BEDS
3 8
4 9
5 10

1 2
AERATION BASINS
3 4

2
O C P
1

SEPTAGE RECEIVING

PARKING Q

B

PARKING BY PASS

K

PARKING A

D E

1 L 2

STORM WATER DISCHARGE 005

BRYAN STOCK TRAIL

BRYAN - EVANSVILLE ROAD

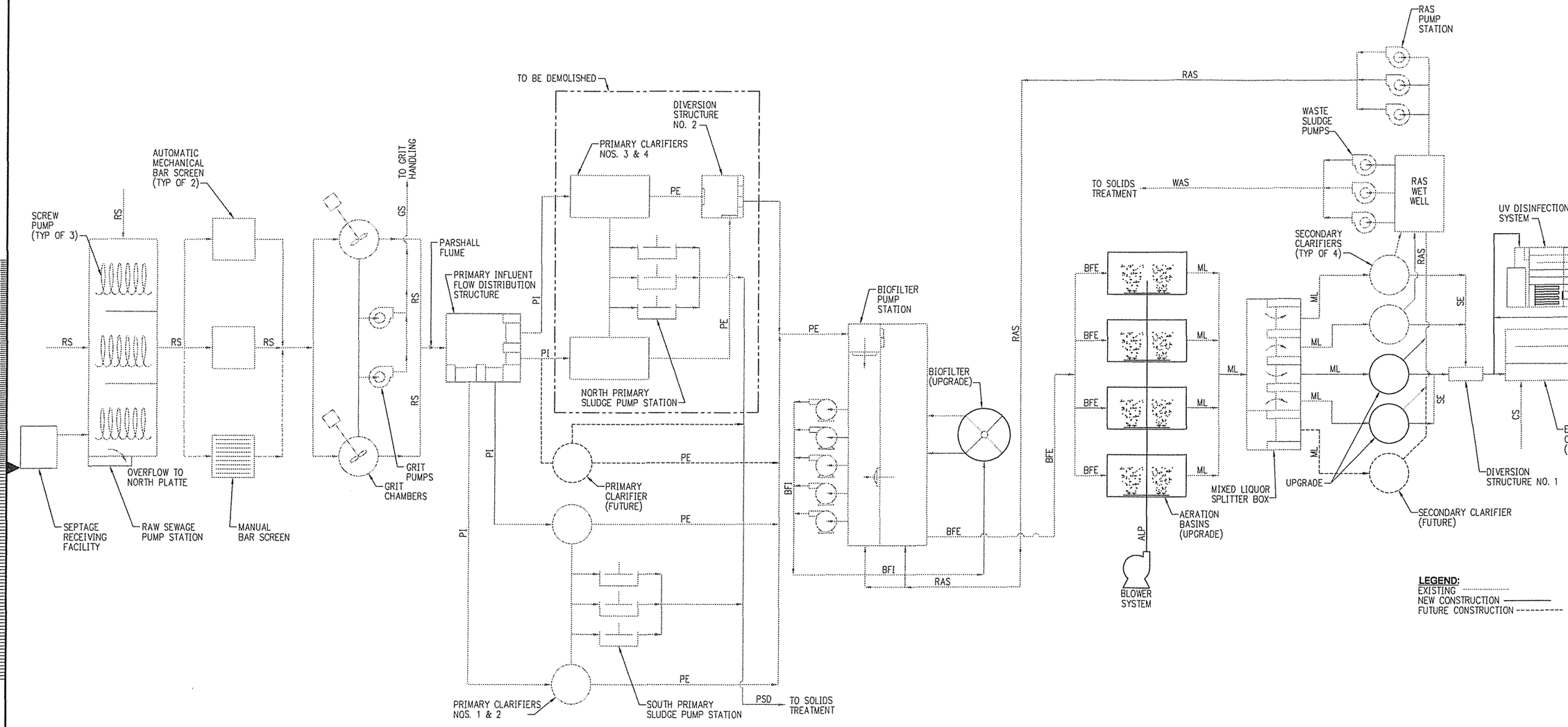
SOUTH ENTRANCE

MAIN ENTRANCE

N

SAM H. HOBBS REGIONAL WASTEWATER TREATMENT PLANT

NO SCALE



no.	date	by	revision

Burns & McDonnell SINCE 1898

date: JUNE, 2006 | detailed: R. FULK

designed: D. BRICKMAN | checked:

CITY OF CASPER-NATRONA COUNTY

JOINT POWERS BOARD NO. 2

SAM H. HOBBS REGIONAL WWTF

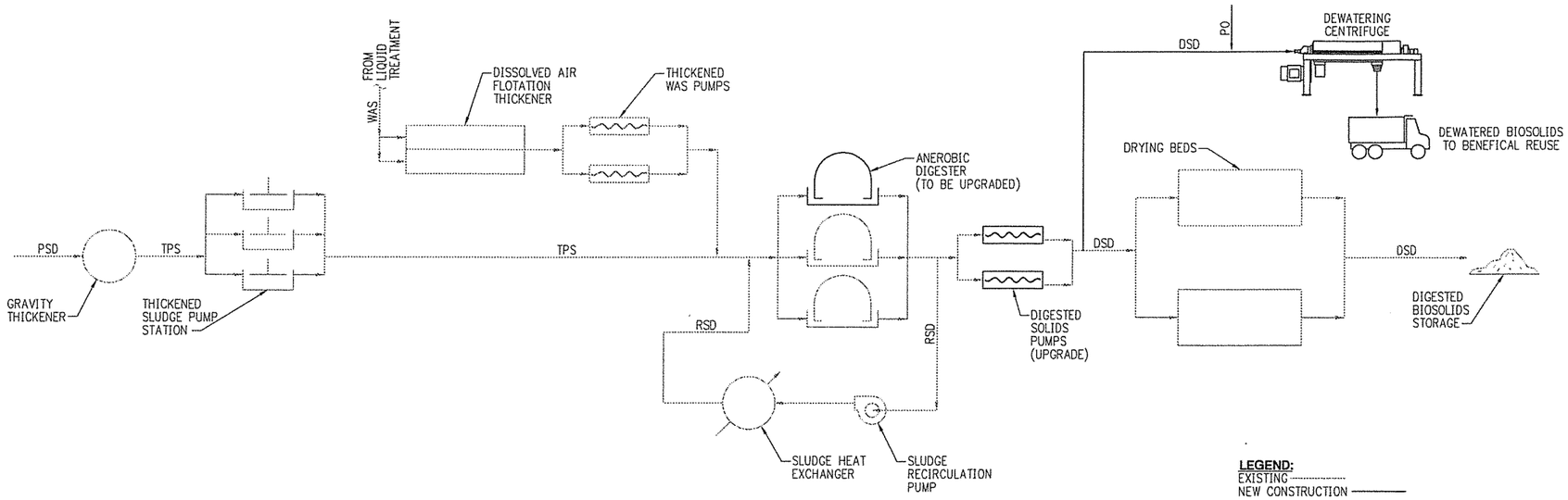
LIQUID TREATMENT PROCESS SCHEMATIC

project: 32090 | contract:

drawing: P2 | rev.: –

sheet: of sheets

file CASP-P002.dwg 03-24-2004 08:19 RWF



LEGEND:
EXISTING .....
NEW CONSTRUCTION ———

PRELIMINARY
NOT FOR CONSTRUCTION

no.	date	by	revision

Burns & McDonnell SINCE 1898

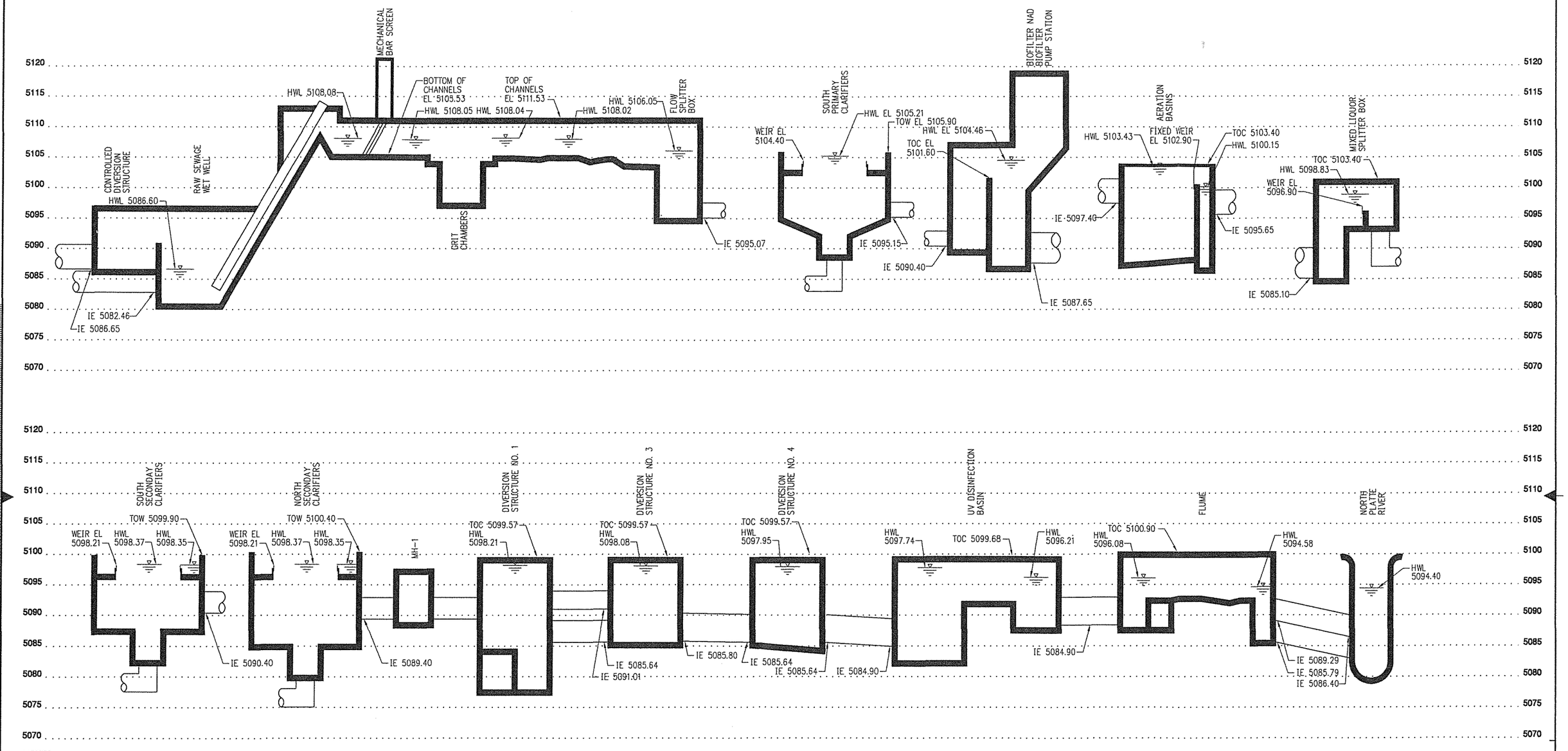
date JUNE, 2006	detailed R. FULK
designed D. BRICKMAN	checked

CITY OF CASPER-NATRONA COUNTY
JOINT POWERS BOARD NO. 2

SAM H. HOBBS REGIONAL WWTF

SOLIDS TREATMENT PROCESS SCHEMATIC

project 32090	contract
drawing P3	rev. –
sheet	of sheets
file CASP-P003.dwg 04-11-2006 8:25 RWF	



NOTES:

1. PEAK HOUR FLOW: 23.0 MGD
   RAS FLOW: 14.0 MGD
2. AT THE PEAK HOUR FLOW, TWO GRIT CHAMBERS AND TWO MECHANICAL BAR SCREENS ARE ASSUMED TO BE IN SERVICE.
3. ELEVATIONS ARE BASED ON NAD83 DATUM.
4. ELEVATIONS OF STRUCTURES ARE BASED ON SURVEY INFORMATION. WHERE SURVEY INFORMATION WAS NOT AVAILABLE, ELEVATIONS WERE EITHER ESTIMATED BASED ON RELATIVE DISTANCES OBTAINED FROM AS-BUILT DRAWINGS FROM SURVEYED STRUCTURES OR AS-BUILT ELEVATIONS (NAD27) CONVERTED TO THE NAD83 DATUM.
5. ELEVATIONS ARE PROVIDED FOR GENERAL REFERENCE ONLY. ALL ELEVATIONS SHOULD BE FIELD VERIFIED.

PRELIMINARY
NOT FOR CONSTRUCTION

no.	date	by	revision

Burns & McDonnell SINCE 1898

date JUNE, 2006 | detailed R. FULK
designed W. RAATZ | checked

CITY OF CASPER-NATRONA COUNTY
JOINT POWERS BOARD NO. 2

SAM H. HOBBS REGIONAL WWTF

HYDRAULIC PROFILE
PEAK HOUR

project 32090 | contract

drawing **P4** | rev. –

sheet | of | sheets

file CASP-P004.dwg 04-11-2006 8:26 RWF

Attachment 3

L. PLEASE PROVIDE A TOPOGRAPHIC MAP (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the treatment plant, depicting the facility and each of its:

1. Intake and discharge structures
2. Hazardous waste treatment storage or disposal facilities
3. Wells where fluids from the facility are injected underground
4. Wells, springs, drinking water wells and any other surface water bodies that are listed in public records or otherwise known to the applicant in the map area.
5. Sewage sludge management facilities, including on-site treatment, storage, and disposal sites.
6. Location(s) at which waste classified as hazardous under RCRA enters the treatment plant by truck, rail or dedicated pipe.
   Access route to the facility (see Q below).

Attachment 4

M. PLEASE PROVIDE A DIAGRAM showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also, provide a narrative description of the diagram.

Narrative Description of Plant Diagram

1. Letter "A" – Operations Building

The operation building contains offices, control room, conference room and laboratory. The control room houses the SCADA system from where plant equipment operation and alarms are monitored. The in-house laboratory conducts both permit and process control testing. Plant operations and the pretreatment program are administered from the operations building.

2. Letter "B" - Headworks Building

Raw wastewater from the collections system and from the septage receiving facility enter the wastewater treatment processes at this point. There is redundancy for each piece of Headworks pretreatment equipment. Under normal operation, one piece of equipment is on-line with the other serving as a lag or back-up unit. The Headworks building contains the following treatment plant equipment:

a. (3) screw lift pumps
    a. Design capacity: 18.4 MGD (per pump)
    b. Actual flow: 6.44 MGD
b. (2) automatic bar screens
    a. Design capacity: 36.8 MGD (per screen)
    b. Actual flow: 6.44 MGD
c. (1) manually raked bar screen
d. (2) grit chambers
    a. Design capacity: 20 MGD (per chamber)
    b. Actual flow: 6.44 MGD
e. (2) grit slurry pumps
    a. Design Capacity: 225 gpm
f. (2) grit cyclones
    a. Design Capacity: 220 GPM
g. (2) grit classifiers
    a. Design Capacity: 15 gpm
h. (1) screenings/grit hopper
i. (1) diesel powered generator
    a. Design Capacity: 500 kw

3. Letter "C" – Secondary Clarifiers

The purpose of the secondary clarifiers is to settle out the mixed liquor biomass and create a clarified secondary effluent. Under normal conditions, three secondary clarifiers are online with one serving as a back-up unit. The secondary clarifiers contain the following equipment:

a. Clarifier #1; 85'
    a. Volume: 521,950 gallons
    b. Design average annual daily surface overflow rate: 440 gpd/ft^2
    c. Actual surface overflow rate*: 378 gpd/ft^2
b. Clarifier #2; 85'
    a. Volume: 521,950 gallons
    b. Surface overflow rate: 440 gpd/ft^2

c. Actual surface overflow rate*: 378 gpd/ft^2

c. Clarifier #3; 85'
   a. Volume: 649,300 gallons
   b. Surface overflow rate: 440 gpd/ft^2
   c. Actual surface overflow rate*: 378 gpd/ft^2

d. Clarifier #4; 85'
   a. Volume: 649,300 gallons
   b. Surface overflow rate: 440 gpd/ft^2
   c. Actual surface overflow rate*: 378 gpd/ft^2

*Note: Clarifier actual flow rate is calculated assuming a 6.44 MGD flow with 3 clarifiers on-line.

4. Letter "D" – Biofilter Building

The fixed media biofilter is offline.

5. Letter "E" – Blower Building

The blower building houses three single stage centrifugal blowers. The blowers are the source of dissolved oxygen that is used in the aeration basins. Under normal operating conditions, one blower would be on-line and operational with the other two serving as lag or back-up units. It is not untypical for the process to call for two blowers to be on-line for a portion of the day. The blower building contains the following equipment:

a. 3 single stage, variable vane, variable diffuser blowers
   a. Blower design capacity: 7,400 SCFM (per blower)
   b. Actual flow rate: 7,400 SCFM

6. Letter "F" – UV Disinfection Facility

The UV disinfection facility utilizes 4 banks of low pressure, high intensity UV lamps to disinfect wastewater. There are 288 lamps total. Under normal operating conditions, two banks of light are operational with the other two serving as lag or back-up units. The intensity increases or decreases as required based on effluent clarity and flow. The UV disinfection facility contains the following equipment:

a. 4 banks of low pressure, high intensity lamps
   a. Hydraulic design capacity: 33.1 MGD
   b. Max month design capacity: 11.7 MGD
   c. Max TSS: 30 mg/L
   d. Actual flow rate: 6.44 MGD
   e. Typical TSS: 4-10 mg/L

7. Letter "G" – Gravity Thickener

The gravity thickener is used to thicken settled primary sludge from two primary clarifiers. Gravity thickener equipment consists of the following:

a. (1) Circular Gravity Thickener
   a. Volume: 84,200 gallons
   b. Design surface overflow rate: 400 – 800 gpd/ft^2
   c. Weir loading rate: 3,942 to 7,886 gpd/ft^2
   d. Actual flow: 210 to 400 gpd/ft^2

8. Letter "G1" – Thickened Sludge Pump Station

The thickened sludge pump station houses pumps which pump thickened sludge from the gravity thickener to a day tank in the Dissolved Air Flotation Thickener (DAFT) building. There are three piston style pumps in the pump station. Under normal operating conditions, one pump serves to pump thickened sludge, one pump serves

to pump scum and the other pump is a back-up pump. The thickened sludge pump station houses the following equipment:

a. 3 Positive Displacement, Plunger Type Pumps
    a. Max pump capacity: 82,080 gpd
    b. Actual flow rate: 27,000 gpd

9. Letter "H" – DAFT Building

Dissolved air floatation units are used to thicken secondary sludge prior to being pumped to the digesters. Under normal operating conditions, one DAFT unit is online while the other unit serves as a back-up. Three pressurization pumps are used to pump DAFT supernatant to pressure tanks where compressed air is introduced. Under normal operating conditions, one of three pressurization pumps is online while the other two serve as back-up units. Under normal operating conditions, one high pressure compressor unit is online while the other serves as a lag or back-up unit. Thickened primary and secondary sludge is mixed in the day tank located at the east end of the DAFT tanks. Combined sludge is pumped to the digesters via thickened waste activated sludge pumps. Under normal operating conditions, one thickened waste activated sludge pump is online while the others serve as a lag or back-up unit. The DAFT building contains the following equipment:

a. (2) DAFT Tanks, Rectangular concrete
    a. Solids loading rate: 500 lbs/unit/hour (per tank)
    b. Hydraulic loading rate: 375-750 gpm
    c. Actual solids loading rate: 120 – 450 lbs/unit/hour
    d. Actual Hydraulic loading rate: ≈ 600 gpm
b. (3) DAFT pressurization pumps
    a. Design capacity: 650 gpm
c. (2) High pressure, rotary type compressor units
    a. Design capacity: 109 cfm
d. (2) Thickened waste activated sludge pumps
    a. Design capacity: 70 – 380 gpm (per pump)

10. Letter "I" – Digester Control Building

The digester control building is central to three anaerobic digesters. It contains the boiler room, gas compressor room, MCC room, heat exchanger room, and digester feed room. Flow from the day tank is pumped to either digester #2 or #3; digester #1 is abandoned in place. The contents of the digesters are constantly recirculated through heat exchangers to maintain digester temperatures. Natural gas/methane fired boilers heat hot water that is circulated through heat exchangers. The contents of the digester are mixed intermittently using compressed gas from the gas compressors. Under normal operating conditions, digester #2 receives 1/3 of sludge feed flow and #3 receives 2/3. One hot water supply pump and one hot water loop pump are in service with a back-up pump available for each. One heat exchanger is online for each digester with one exchanger available as a back-up unit. There is one gas compressor available for each digester with no back-up units available. There is typically one boiler online while another serves as a lag or back-up unit. The digester control building contains the following equipment:

a. (2) 65' digesters (#1 is off-line)
    a. Volume: 470,000 gallons (per digester)
    b. Design HRT: 15 – 20 days
b. (1) 70' digester
    a. Volume: 800,000 gallons
    b. Design HRT: 15 – 20 days
c. (3) Self-priming, centrifugal recirculation pumps
    a. Design capacity: 180 gpm
d. (4) Heating water supply pumps
    a. Design capacity: 300 gpm

e. (3) External spiral heat exchangers
    a. Rated transfer capacity: 1,000,000 BTU/hr (per exchanger)
    b. Design flow rate: 200 gpm (per exchanger)
f. (1) Liquid ring gas compressor units (for digester #2)
    a. Design Capacity: 98 cfm
    b. Actual cfm: 98 cfm
    c. Design discharge pressure: 14.4 psi
g. (1) Liquid ring gas compressor units (for digester #3)
    a. Design Capacity: 114 cfm
    b. Actual cfm: 114 cfm
    c. Design discharge pressure: 19.8 psi

11. Letter "J" - Garage/Shop Building

The wastewater collections division utilizes the garage for parking their Vactor trucks, CCTV equipment van, and associated equipment. The shop that is attached to the same building is used for wastewater treatment plant maintenance projects and tool storage.

12. Letter "K" – Maintenance/Collections Office Building

The maintenance/collection building is office space that is utilized by the wastewater collections division and the wastewater treatment plant maintenance staff.

13. Letter "L" – Primary Clarifiers

The purpose of the primary clarifiers is to settle out the primary sludge. The primary sludge is pumped to the gravity thickener and the primary clarifier effluent flows to the aeration basins. Under normal operating conditions, both primary clarifiers are in service. Despite the continuous use of both clarifiers, the facility is able to operate with just one primary clarifier online. The primary clarifiers consist of the following equipment:

a. (2) 80' Primary Clarifiers, Circular Concrete
    a. Volume: 417,800 gallons (each)
    b. Surface overflow rate: 995 gpd/ft^2
    c. Actual surface overflow rate: 640.54 gpd/ft^2

14. Letter "M" – Dewatering Building

The dewatering building contains the dewatering centrifuges. The anaerobically digested solids are pumped from the digesters to the centrifuge via feed pumps. The centrifuge produces a dewatered "cake" of about 21-23% solids. The resulting Class "B" solids are trucked to the City of Casper Regional Landfill where they are utilized as daily landfill cover. Under normal conditions, the centrifuge operates 5-8 hr/day. When a centrifuge is in operation, there is one polymer pump, one feed pump and one sludge grinder online. There are back-ups for each pump and grinder. The dewatering building equipment consists of:

a. (2) Sludge dewatering centrifuge unit
    a. Design hydraulic capacity: 100 – 200 gpm
b. (2) Digested sludge feed pumps
    a. Design pump capacity: 200 gpm (each)
c. (2) Digested sludge grinders
    a. Design Hydraulic capacity: 400 gpm
d. (2) Polymer feed pumps
    a. Design capacity: 200 – 1200 gph

15. Letter "N" – Equipment Maintenance Building

In the past, the equipment maintenance building housed chlorination feed equipment. When the facility converted from chlorine disinfection to UV disinfection, this building was converted to storage and, again, to a maintenance shop. Also contained in this building is the plant water 1 system. Plant water 1 is used throughout the plant for pump seal water, wash down water and irrigation purposes. Under normal operating conditions, one plant water 1 pump is operational and the other two serve as lag or back-up units. The plant water gallery contains the following equipment:

a. (1) PW1 pump (large)
    a. Design pump capacity: 800 gpm
b. (2) PW1 pumps (small)
    a. Design pump capacity: 300 gpm (each)
c. (1) Pressurization tank
    a. Design Hydraulic capacity: 4,600 gallons
d. (1) Plant water strainer
    a. Design capacity: 2,200 gpm

16. Letter "O" – Secondary Gallery

The secondary gallery contains the waste activated sludge (WAS) system, plant water 2 (PW2) system, and low pressure air system blowers. The WAS pumps pump from a returned activated sludge (RAS) line to the DAFT units. The PW2 system supplies seal water to the secondary gallery pumps, wash down water, and sweetener water for the gravity thickener. Under normal operating conditions, one WAS pump is online while another serves as a back-up. One PW2 pump is online while 3 others serve as lag or back-up units. One low pressure air blower is online while another serves as a back-up unit. The secondary gallery contains the following equipment:

a. (2) waste activated sludge pumps
    a. Design pump capacity: 560 gpm (each)
    b. Actual flow rate: 40 – 150 gpm
b. (2) PW2 system pumps (large)
    a. Design pump capacity: 400 gpm (each)
c. (2) PW2 system pumps (small)
    a. Design Hydraulic capacity: 190 gpm each)
d. (2) centrifugal blowers (ALP system)
    a. Design capacity:
e. (1) pressurization tank
    a. Capacity: 1,570 gallons
f. (1) PW2 system strainer
    a. Design capacity: 3,000 gpm

17. Letter "P" – Return Activated Sludge (RAS) Pump Room

The RAS pump room houses RAS pumps which pump from the RAS wetwell to a point just ahead of the biotower control structure. Under normal operating conditions, one RAS pump is online while two others serve as lag or back-up units. The RAS pump room contains the following equipment:

a. (3) return activated sludge pumps
    a. Design pump capacity: 14.4 MGD (each)
    b. Actual flow rate: 60 – 70% of Influent flow

18. Other Map Notables

Sludge drying beds located on the east side of the plant are all empty. The facility utilized these sludge drying beds for drying anaerobically digested solids prior to the installation of the dewatering building and centrifuge.

The sludge drying beds located on the west side of the plant are utilized for drying industrial sump waste and

grease trap waste. These materials are dried, tested and hauled to the City of Casper Regional Landfill for disposal. The "lay down yard" is used for storing scrap materials and equipment that are to be hauled in for recycling.

IN HOUSE LABORATORY REPORT
BOD Analysis Hach Method 10360 (based on SM 5210B)
Hach LBOD Probe

BOTTLE:	SAMPLE ID:	SEED VOL (mL)	SAMP VOL (mL)	INITIAL DO (mg/L)	FINAL DO (mg/L)	SEED CONTROL VALUE	BOD, 5 DAY (mg/L)	AVERAGE BOD (mg/L)	REPORTED BOD (mg/L)
32	BLANK		300	7.47	7.43		0.04	0.04	**0.04**
27	**LCS**	3	6	7.47	2.66		206.76	207.01	**207**
48A	**LCS**	3	6	7.46	2.64		207.26		
36A	**SEED**		10	7.31	5.00	0.231	69.30	67.48	
46	**SEED**		12	7.28	4.65	0.219	65.75		
26	**SEED**		15	7.24	3.87	0.225	67.40		
1	**DEQ Split**	3	50	7.51	6.37		-	2.66	**2.66**
27A	**DEQ Split**	3	100	7.59	6.06		-		
318	**DEQ Split**	3	200	7.80	5.35		2.66		

Seed Control Factor:	**0.7**	(0.6-1.0)

Sample Date: 3/7/2018

Start Date/Time:	3/9/2018 13:50	*Analyst:*	James Ritchie
Temperature °C:	20.1	*Hg(mm)*	24.63 *Slope %:* 109.1
Stop Date/Time:	3/14/2018 10:55	*Analyst:*	James Ritchie
Temperature °C:	20.5	*Hg(mm)*	24.81 *Slope %:* 108.9

LCS: 198 ± 30.5 mg/L	
Manufacturer:	NCL
Lot#:	B12D171012B1
Exp.:	10/12/2018

Buffer:	
Manufacturer:	Hach
Lot#:	A7294
Exp.:	10/31/2022

LDO METER	
Manufacturer:	NCL
Model #	HQ40d
Serial #	70600010186

LDO PROBE	
Manufacturer:	NCL
Model #	LBOD101
Serial #	81963036301

CASPER WWTP IN-HOUSE LABORATORY

PROCEDURE For *Escherichia coli.* EPA Method 1603

Sample Date/Time: 3/7/2018 13:25

Analyst: *James Ritchie*

Flow 7.41 MGD

UV Transmittance: 40 %

Del. UV Dose: 49.81 mW-sec/cm²

35.0 ± 0.5°C Incubator/Water bath

Lindberg, Model # WB1110A, SN S01G-335999-SG

Date: 3/7/2018

Temp: 35.0°C **Time In:** 13:50

44.5 ± 0.2°C Incubator/Water Bath

Date: 3/7/2018 **Time In:** 15:30

Date: 3/8/2018 **Time Out:** 12:45

Temp: 44.5°C

Sample ID:	Volume (mL)	# of Colonies Observed (only carry over counts between 20-80 colonies)	CFU/100 mL	CFU/100mL Reported
Blank	100	0	0	0
FEFF-001	10	2	-	
FEFF-001	25	10	-	
FEFF-001	50	13	-	
FEFF-001	100	26	26	**26**

0.45µm Filters

Manufacturer: Pall

Lot #: T71048

Exp.: 6/30/2020

Media

Manufacturer: Aqua Plates

Lot #: 160229011902

Exp.: 2/28/2019

CASPER WWTP IN HOUSE LABORATORY

Standard Methods, 20th Edition, Part 4500-H+ A and B

Sample Date/Time: 3/7/18 1:25 PM **Analyst:** James Ritchie

Sample ID	pH	Temperature °C
Outfall-001	7.13	11.4

pH Meter 1
ORION STAR A111 SN J00658
Calibration Due: 10/2018

Temperature Probe
SN 160941476
Calibration Due: 11/19/2018

CASPER WWTP IN-HOUSE LABORATORY

Standard Methods 20th ed., 1998,**2540D/2540E, Total Suspended Solids/Total Volatile Suspended Solids**

Sampled Date: 3/7/2018

Analyst: *James Ritchie* **Analysis Date/Time:** 3/9/2018 8:50

Sample ID	SAMPLE VOLUME, mLs	ASH, Grams	DRY SOLIDS, Grams	Dish WT., Grams	DRY SOLIDS, Grams	ASH, Grams	TSS mg/L	Reported TSS mg/L	Ash Difference	TVSS mg/L	Reported TVSS mg/L
Outfall-001	1000	1.1335	1.1351	1.1333	0.0018	0.0002	1.8	**1.8**	0.2	1.6	**2**
Outfall-001	1000	1.0878	1.0894	1.0873	0.0021	0.0005	2.1	**2.1**	0.5	1.6	**2**

Mettler Balance AE160 last serviced 10/11/2017
Drying Oven: **VWR 1350 FM** Muffle Furnace:**Lindberg**
Filter Whatman 934-AH, Catalog # 1827-047, Lot # 12163044

WAMCO LAB, Inc.
864 South Spruce St.
Casper, WY 82601

CITY OF CASPER
INDUSTRIAL PRETREATMENT PROGRAM
FEB - 1 2018
RECEIVED

Phone: (307) 266-3252
Fax: (307) 266-1316
E-mail - wamcolab@aol.com

TOXICITY REPORT

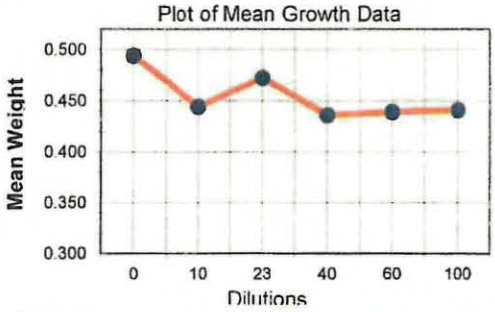
Full Effluent Chronic Test
Fathead Minnows

Permitee Name:	City of Casper WWTP			NPDES No.	WY-0021920
Growth - NOEC	> 100	IC25:	*Remark	Pass X	Fail
Survival - NOEC	> 100				
	Date @ Time		Sample Type	As Rec'd Temp. °C	
# 1 Sample:	1/14-15/18 @ 7-7		Comp	1.9	
# 2 Sample:	1/16-16/18 @ 0-11:00		Comp	2.3	
# 3 Sample:	1/18-18-18 @ 0-11:50		Comp	2.4	
Test Animal:	Fathead Minnows	Age:	< 24 Hours		
Analysis Date @ Time:	Started:	01/15/18	@ 10:50	End: 01/22/15	@ 11:20

Survival	Dilutions					
Replicas	0	10	23	40	60	100
A	10	10	10	9	9	10
B	10	10	10	10	10	10
C	10	10	10	10	9	9
D	10	10	10	10	10	10
Percent survival	100	100	100	98	95	98

Mean Weight	Dilutions					
Replicates	0	10	23	40	60	100
A	0.502	0.471	0.500	0.394	0.381	0.487
B	0.492	0.407	0.482	0.391	0.469	0.426
C	0.494	0.454	0.442	0.511	0.407	0.364
D	0.488	0.444	0.465	0.448	0.499	0.487
Mean of Each Dilution	0.494	0.444	0.472	0.436	0.439	0.441

Receiving Water used for Dilution, (Y or N)		N
	Effluent Mg/L	Dilution Mg/L
Hardness	472	94
Alkalinity	300	96
Initial pH, Units	6.70	7.43
Final pH, Units	7.63	7.38
Initial Residual CL_2	< 0.01	< 0.01
Initial Ammonia	2.0	< 0.05
Final Ammonia	2.8	< 0.05
Temperature, As Rec'd, °C	1.9	
Initial Dissolved Oxygen	6.53	6.36



*Remarks: No linear interpolation can be determined as none of the group response means are less than the control response mean.

Analyst: Elaine Gold

Signature: Elaine Gold

Date: 01/24/18

EPA-821-R-02-013, Fourth Edition
Test Method 1000.0

WAMCO LAB, Inc,
864 South Spruce St.
Casper, WY 82601

Phone: (307) 266-3252
Fax: (307) 266-1316
E-mail - wamcolab@aol.com

WATER AND QUALITY REPORT

Full Effluent Chronic Test

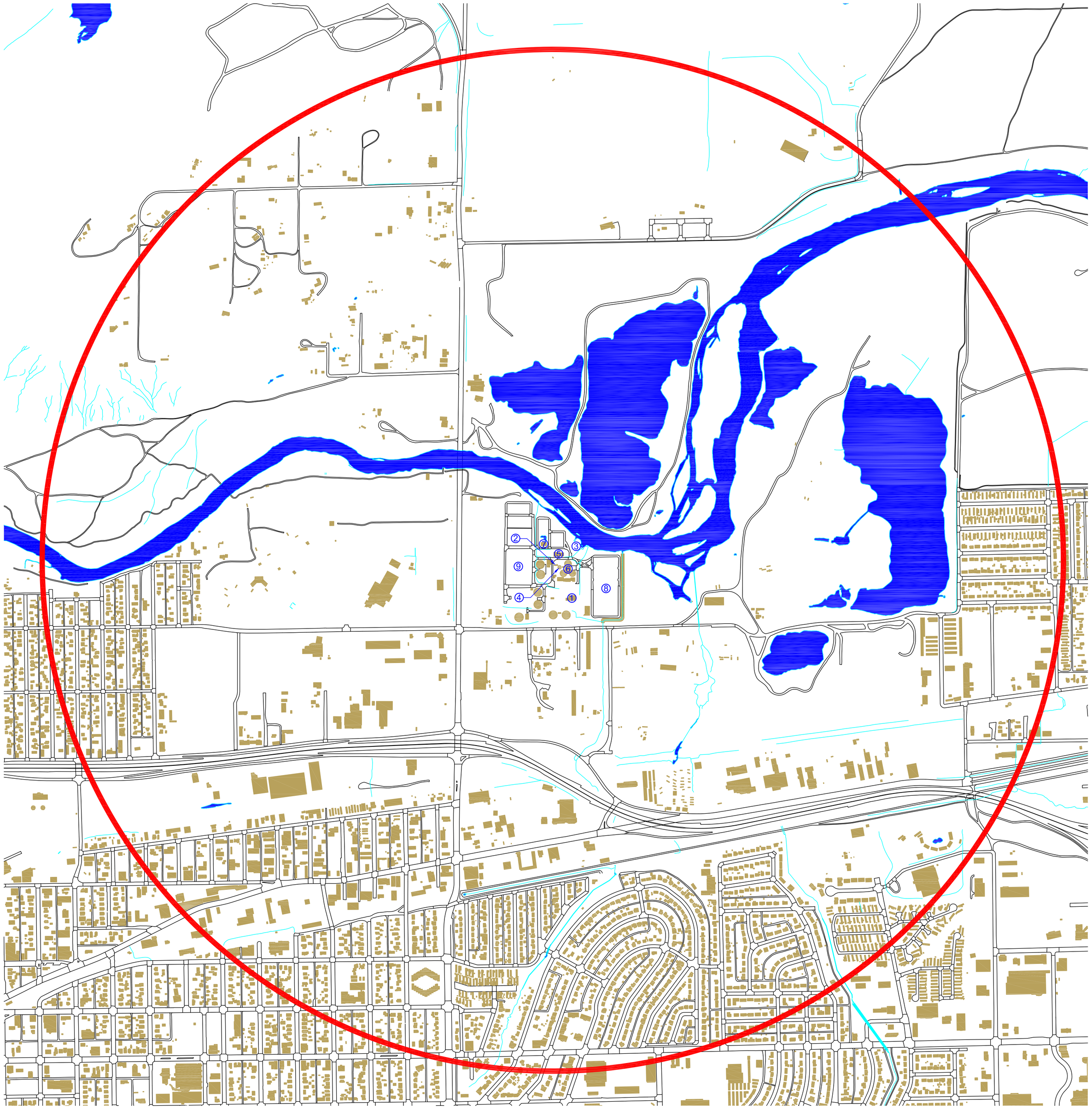
Permitee:	City of Casper WWTP	Date:	01/24/18 WO#: 12839
Discharge:	Wastewater Treatment Plant	Location:	Near Casper
Permit #	WY-0021920	Receiving Water :	N/A
County:	Natrona	Sampled by:	Operators
State:	Wyoming		
Industry:	Waste Water Plant		
Source of Waters:	Effluent		Receiving
Sampling Point:	Effluent 001	Sampling Point:	
Date @ Time:	1/14-15/18 @ 7-7	Date & Time:	
Type:	Comp	Type:	
As Rec. Temp., °C	1.9	As Rec. Temp., °C:	

Receiving Water used as Dilution Water? N

Water Analysis
Milligrams per Liter

	Effluent	Dilution
Total Dissolved Solids (Calculated)	1540	
Sodium	374	
Potassium	3	
Calcium	111	
Magnesium	48	
Sulfate	641	
Chloride	183	
Carbonate	0	
Bicarbonate	366	
Hardness	472	94
Alkalinity	300	96
Conductivity, uMhos / cm @ °C	3750	560
pH, Units, Initial	6.70	7.43
pH, Units, 24 Hours	7.23	7.46
Residual Chlorine	< 0.01	< 0.01
Initial Ammonia	2.0	< 0.05
Final Ammonia	2.8	< 0.05
Temperature, As Received, °C	1.9	
Initital Dissolved Oxygen, As Received	6.53	6.36

Remark:



1. HEADWORKS BUILDING (INLET FROM COLLECTIONS SYSTEM AND SEPTAGE RECEIVING FACILITY)
2. FINAL EFFLUENT PARSHALL FLUME
3. OUTFALL 001
4. PRIMARY SLUDGE – GRAVITY THICKNER
5. SECONDARY SLUDGE – DAFT
6. ANAEROBIC DIGESTERS
7. DEWATERING BUILDING
8. SLUDGE DRYING BEDS – USED ONLY AS BACKUP TO CENTRIFUGE DEWATERING
9. DRYING BEDS USED FOR INDUSTRIAL DIRT

General Notes

LOCATION MAP
NOT TO SCALE

Professional Engineer (Civil)
Date
WYOMING

No.	Revision/Issue	Date

Firm Name and Address

CITY OF CASPER
ENGINEERING
200 N. DAVID
CASPER, WY
82601

WASTE WATER
TREATMENT
PLANT
CASPER, WY

Date 4/17/13	Sheet 1 OF 1
Drawn TZ	
Scale NO SCALE	